DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 42-46 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

3. In claim 27, applicant sets forth the limitation that connecting means are coupled to the head restraint and to the support and the connecting means are configured in such a manner that when folding down the support with the head restraint attached to it, the head restraint is held in the non-operating position at a preset angle relative to the support. While this limitation alone is set forth in applicant's specification, claims 42-46, which are dependent upon claim 27 go on to claim a circumferential ring and Bowden cables. According to applicant's disclosure, the circumferential ring and Bowden cable arrangement allow the angle between the support and the headrest to adjust as the support is folded down. It appears that claims 42-46 therefore contain limitations corresponding to two embodiments which have mutually exclusive characteristics. As such, the examiner will examine claims

42-26 as best understood, giving limited weight to the limitations regarding the head restraint being held at a preset angle.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 35 and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 35 recites the limitation "the springs" in line 1. There is insufficient antecedent basis for this limitation in the claim. It appears as though “the springs” should be, “the sprung mounted means.”

7. Regarding claim 43, the statement that the ring is mounted “flexibly” relative to the cylinder is unclear. The term “flexibly” ordinarily connotates a bendable or pliable relationship, whereas it appears as though the term in applicant's claim refers to a rotationally slidable relationship. Clarification of the terminology is requested.

Drawings

8. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: α and α’. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled

in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 27-35, 39-43, 47, 48, 50, and 51 are rejected under 35 U.S.C. 102(b) as being anticipated by Droual (US 6,050,633).

11. Regarding claim 27, Droual discloses a head restraint arrangement:

    a. Having a pivotable head restraint (8),

    b. Having a support (The entire seatback 4, including the inherent framework therein is considered the support.) on which the head restraint is pivotably attached between an operating position and a non-operating position (Col. 4, lines 28-30, "These headrests pivot individually between firstly a substantially vertical in-use position and secondly a folded away position in which said headrests are tilted forwards."),

c. Having a locking mechanism (21) coupled with the head restraint, which is configured in such a manner that in a locked state the head restraint is held in the operating position and in an unlocked state the head restraint is released for movement to the non-operating position (Col. 1, lines 59-65, "...a second latch which is mounted on the framework of the seat back and which is movable between an active position in which said second latch co-operates with a second locking piece secured to the headrest to prevent said headrest moving when it is in its in-use position, and a folded away position in which said second latch does not co-operate with the second locking piece...")

d. Having an actuation device (10) for releasing the locking mechanism

e. Wherein the support is pivotably mounted relative to a horizontal plane so that the support with the head restraint can be folded down (Col. 1, lines 9-15, "...the invention relates to a motor vehicle seat comprising...a seat back...including a framework mounted to pivot between a substantially vertical in-use position and a folded away position in which said seat back is tilted forwards..."),

f. Connecting means are coupled to the head restraint and to the support (Col. 2, lines 4-9, "...a coupling device which is mounted on the framework of the seat back and which co-operates with the second latch to displace said second latch into its folded-away position which the seat back is tilted forwards, such that the headrest is the automatically placed in its folded away position...")

g. The connecting means are configured in such a manner that when folding down the support with the head restraint attached to it the head restrain is held in the non-operating position at a preset angle relative to the support (See excerpt from Col. 2, lines 4-9, quoted above.).

12. Regarding claim 28, Droual discloses that the locking mechanism is configured in such a manner that when the head restraint is moved to the operating position the locking mechanism is brought independently into the locked state and thus the head restraint is held in the operating position (Col. 1, lines 65-67, "...the second latch being urged by second resilient means towards its active position...").

13. Regarding claim 29, Droual discloses that the locking mechanism comprises a latch (28) with an opening (in camming surface 34, See Fig. 6) in combination with a locking pin (33), whereby in the locked state the locking pin engages the opening of the latch (as in Fig. 6), while when the actuation device is manipulated the locking pin is moved from the opening of the latch (as in Fig. 7).

14. Regarding claim 30, Droual discloses that the locking mechanism is configured in such a manner that in the unlocked state the locking pin is held against a force of sprung mounted means whereby when the head restraint is moved to the operating position the retention of the locking pin is released, so that through the force of the sprung mounted means the locking pin engages the opening of the latch, while when the actuation device is manipulated, the locking pin is again moved from the opening of the latch and held against the force of the sprung mounted means (Col.

1, lines 65-67, "...the second latch being urged by second resilient means towards its active position...").

15. Regarding claim 31, Droual discloses that the latch (28) is coupled with the head restraint (As shown by Fig. 6, latch 28 is directly coupled to the head restraint framework 29) and the locking pin (33) with the support (As shown by Fig. 6, the locking pin 33 is mounted on the crank 22, which is supported by the support.).
16. Regarding claim 32, Droual discloses that the head restraint is attached to a cylinder (30), which is rotatably mounted in relation to the support.
17. Regarding claim 33, Droual discloses that sprung mounted means (35) are provided, in order when the actuation device is manipulated to move the head restraint automatically from the operating position to the non-operating position (Col. 6, lines 12-14, "...the headrests 8 are urged towards their folded-away position under the effect of their won weight and/or under the effect of springs 35...").
18. Regarding claim 34, Droual discloses that the sprung-mounted means comprise springs (35), which on the one hand are coupled with the head restraint (Col. 6, lines 14-16, "...springs 35...e.g. mounted between one of the plates 28 of each headrest and the support 31..." The examiner notes that the specification points out that support 31 is rigidly fixed to the seatback frame.).
19. Regarding claim 35, Droual discloses that the sprung mounted means are on the one hand coupled with the cylinder and on the other hand with the support (As

shown by Fig. 5 the sprung mounted means 35 is a torsional spring that is positioned to surround pivot 30 between the headrest and the support.).

20. Regarding claim 39, Droual discloses that the actuation device (10) comprises a pressure mechanism (It is clear from Fig. 2 that the actuation device 10 requires pressure from the user of the system in order to release the headrest. Thus the actuation device 10 is a pressure mechanism.).

21. Regarding claim 40, Droual discloses that limitation means (31a and 31b) are provided, in order when the actuation device is manipulated to limit movement of the head restraint to the non-operating position, whereby the limitation means are configured in such a manner that the head restraint in the non operating position encloses a predefined angle in relation to the support (Col. 5, lines 62-67, "The pivot 30 may optionally include an abutment finger 30a that is angularly displaceable with the corresponding headrest 8, said abutment finger co-operating with two abutments 31a to 31b that are secured to the support 31 to define the in-use and the folded away positions of the headrest.").

22. Regarding claim 41, Droual discloses that the head restraint is attached to a cylinder (3), rotatably mounted on the support ("support" 31 is considered part of the seatback frame and thus part of the support), wherein the cylinder exhibits at least one projection (30a) which engages at least one recess (The space between extensions 31a and 31b is considered a recess) formed in the circumferential direction of the cylinder and is mounted therein (Fig. 2 clearly shows the projection 30a mounted within the recess between abutments 31a and 31b), whereby a

longitudinal end of the recess forms a stop for the corresponding projection of the cylinder and limits rotation of the cylinder with the head restrain attached to it (Col. 5, lines 62-67, "The pivot 30 may optionally include an abutment finger 30a that is angularly displaceable with the corresponding headrest 8, said abutment finger co-operating with two abutments 31a to 31b that are secured to the support 31 to define the in-use and the folded away positions of the headrest.").

23. Regarding claim 42, Droual discloses that the at least one recess is provided in a corresponding ring (Fig. 2 clearly shows a ring surrounding pivot 30 in which the recess is defined between abutments 31a and 31b.), which is formed in the circumferential direction of the cylinder and which surrounds the cylinder (See Fig. 2).
24. Regarding claim 43, Droual discloses that the ring is mounted such that it may rotate relative to the cylinder (As disclosed, the pivot 30 rotates within the ring containing abutments 31a and 31b.).
25. Regarding claim 47, Droual discloses that the head restrain arrangement is configured in such a manner that the head restraint is folded away forward in the non-operating position relative to the support (Col. 1, lines 29-32, "...at least one headrest that is pivotally mounted on the framework of the seat back to pivot between a substantially vertical in-use position and a folded away position in which the headrest is tilted forwards...").
26. Regarding claim 48, Droual discloses a head restraint arrangement:
    a. Having a pivotable head restraint (8),

b. Having a support (The entire seatback 4, including the inherent framework therein is considered the support.) on which the head restraint is pivotably attached between an operating position and a non-operating position (Col. 4, lines 28-30, "These headrests pivot individually between firstly a substantially vertical in-use position and secondly a folded away position in which said headrests are tilted forwards."),

c. Having a locking mechanism (21) coupled with the head restraint, which is configured in such a manner that in a locked state the head restraint is held in the operating position and in an unlocked state the head restraint is released for movement to the non-operating position (Col. 1, lines 59-65, "...a second latch which is mounted on the framework of the seat back and which is movable between an active position in which said second latch co-operates with a second locking piece secured to the headrest to prevent said headrest moving when it is in its in-use position, and a folded away position in which said second latch does not co-operate with the second locking piece...")

d. Having an actuation device (10) for releasing the locking mechanism

e. Wherein the locking mechanism (21) comprises a latch (28) with an opening (located in camming surface 34, See Fig. 6) in combination with a locking pin (33), whereby in the locked state (shown in Fig. 6) the locking pin engages the opening of the latch, while when the actuation device is actuated (shown in Fig. 7) the locking pin is moved from the opening of the latch.

19. Regarding claim 50, Droual discloses a seat with the head restraint arrangement according to claim 27 (See Fig. 1).

20. Regarding claim 51, Droual discloses the seat is a rear seat of a vehicle (Fig. 1 clearly depicts the rear seat of a vehicle.).

21. Claims 27 and 41-44 are rejected under 35 U.S.C. 102(e) as being anticipated by Kamrath et al. (US 2005/0067874).

22. Regarding claim 27, Kamrath et al. discloses a head restraint arrangement (30):

    a. Having a pivotable head restraint (20),

    b. Having a support (The entire seatback 18, including the inherent framework therein is considered the support. Mounting bracket 32, fixedly secured to the seatback framework is also considered a portion of the support.) on which the head restraint is pivotably attached between an operating position and a non-operating position (As can be seen from Fig. 1 to Fig. 2, the head restraint 20 pivots relative to the seatback 18 from its operating position in Fig. 1 to a non-operating position in Fig. 2.),

    c. Having a locking mechanism (44, Fig. 4) coupled with the head restraint, which is configured in such a manner that in a locked state the head restraint is held in the operating position and in an unlocked state the head restraint is released for movement to the non-operating position (Paragraph [0008], "A lock to prevent motion of the headrest when the seatback is in the upright position is provided...Upon rotation of the seatback, the clutch disengages the lock from the headrest. Additional rotation of the seatback causes the headrest to reach

a stowed position." Thus the lock holds the head restraint in its operating position, unless the lock is placed in its unlocked state whereby the head restraint may moved to a stowed, non-operating position.)

d. Having an actuation device (39, Paragraph [0038], "Latch 39 attaches to a lip in lock 44, allowing clutch 38 to pull lock 44." Thus the latch 39 serves as an actuator since it pulls lock 44 out of engagement with the mounting bracket 32.) for releasing the locking mechanism

e. Wherein the support is pivotably mounted relative to a horizontal plane so that the support with the head restraint can be folded down (Figs. 1 and 2 show that the support 18 is pivotably mounted relative to a horizontal plane such that the support 18 along with the head restraint 20 may be folded down to the position shown in Fig. 2.),

f. Connecting means (56) are coupled to the head restraint and to the support (As shown by Fig. 4, a tab corresponding to the cable 56 connects to a portion of the mounting bracket plate 68, which is part of what is considered the support. Furthermore, the connecting means 56 is connected to the head restraint via clutch 38, cylinder 36, rotation bracket 34, and progs 31),

g. The connecting means are configured in such a manner that when folding down the support with the head restraint attached to it, the head restraint is held in the non operating position (It is the connecting means 36 which causes the rotation of the headrest as disclosed.).

23. Regarding claim 41, Kamrath et al. discloses that the head restraint is attached to a cylinder (36), rotatably mounted on the support (32), wherein the cylinder exhibits at least one projection (42) which engages at least one recess (40) formed in the circumferential direction of the cylinder and is mounted therein (See Fig. 3), whereby a longitudinal end of the recess forms a stop for the corresponding projection of the cylinder and limits rotation of the cylinder with the head restraint attached to it (The head restraint clearly cannot rotate further than allowed by the length of the recess 40.).
24. Regarding claim 42, Kamrath et al. discloses that the at least one recess is provided in a corresponding ring (38), which is formed in the circumferential direction of the cylinder and which surrounds the cylinder (See Fig. 3).
25. Regarding claim 43, Kamrath et al discloses that the ring is mounted flexibly relative to the cylinder (Clutch 38 may rotatably slide relative to the cylinder 36. As such its position relative to cylinder 36 is considered flexible.).
26. Regarding claim 44, Kamrath et al. discloses that the ring is held in position relative to the cylinder via connecting means (56), which are coupled to the support (Paragraph [0045], "In Fig. 8, a force has been exerted by cable 56 on clutch 38, causing the clutch 38 to rotate. When clutch 38 rotates, pin 42 moves within first cam 40..." Since connecting means 56 is what causes rotation of the ring 38 relative to the cylinder 36 when the seat back is mobile, it also holds the ring 38 in position relative to the cylinder when the seatback is stationary.).

Claim Rejections - 35 USC § 103

27. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

28. Claims 36-38, 49, and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Droual (US 6,050,633) in view of Takata (US 2002/0084686).

29. Regarding claims 36, Droual discloses a head restraint arrangement including all of the structure of claim 27, upon which claims 36-38 are dependent, as set forth above.

30. Droual does not expressly disclose damping means in order to dampen movement of the head restraint from the operating position to the non operating position.

31. Takata, however, states, "the currently available retractable headrest is of a structure employed in combination with a pivot or retracting mechanism by which the headrest can be pivoted forwards or rearwards between a use position and a retracted position in which the headrest is accommodated inside the seatback. In this known retractable headrest assembly, the retracting mechanism makes use of a combination of at least one spring element with a damping device..." Damping devices are commonly known to prevent or lessen the spring oscillations in the movement between operating to retracted position.

32. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the head restraint arrangement of Droual by

including a damping means, similar to that suggested by Takata. This modification would be beneficial since it would prevent or lessen the instance of oscillations associated with spring biased movement from an operating to retracted position.

33. Regarding claims 37-38, Droual as modified by Takata discloses the claimed invention except that the damping means are not expressly suggested to be coupled with the head restraint and with the support or with the cylinder and with the support. However, it is well known in the art of damping systems that the damper is often associated with the location of the spring device and commonly at the joint between the two parts which require damping. The spring of Droual as explained above is located at the joint between the head restraint and the support and is further coupled between the head restraint, the cylinder, and the support. Thus, because it was commonly known in the art to do so, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the damper at the joint between the head restraint and the support coupled on the one hand to the support, and on the other to either the head restraint or the cylinder.

34. Claim 49 recites limitations substantially similar to claim 27, yet much broader, and including the limitations of claim 36. Since Droual anticipates the narrower limitations of claim 27 and Droual as modified by Takata anticipates the limitations of claim 36. Droual as modified by Takata further anticipates the limitations of claim 49. As such, claim 49 is rejected under the same basis and rationale as set forth above.

35. Regarding claim 52, Droual as modified by Takata discloses that a backrest of the seat comprises a frame as the support for the head restraint (See discussion of claim 27, which forms the basis of the rejection of claim 49, above.).

36. Claims 45 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamrath et al. (US 2005/0067874).

37. Regarding claim 45, Kamrath et al. discloses that the connecting means comprise at least one Bowden cable arrangement (56) coupled on the one hand with a ring (38, See Fig. 3). Kamrath et al. does not expressly disclose that the at least one Bowden cable arrangement is connected on the other hand with a pivot spindle of the support. Kamrath et al., however, does state, "Cable 56 is attached at it other end to any point which moves relative to seat back 18 and head rest 20." Since the seat back pivots about the pivot spindle, the pivot spindle moves relative to the seat back. The examiner takes Official Notice that it would have been obvious too one having ordinary skill in the art to choose the pivot spindle as the point of attachment for the Bowden cable since the pivot spindle moves relative to the seat back yet is located closest to the seatback structure. As such the Bowden cable an be hidden from view if attached to the pivot spindle and avoid interference from extraneous objects for example the feet of rear passengers.

38. Regarding claim 46, Kamrath et al. discloses that the connecting means comprise a connection between the at least one ring and the support (As shown by Fig. 3 and Fig. 4, the cable 56 is attached at its end to the ring 38 and at an intermediate position to the mounting bracket 32 of the support.

Conclusion

39. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Herzer et al., Takizawa, Nemoto, Robinson, Sutton, Gilson et al., Saberan et al, Kamrath et al., and Takeda disclose structures having similarities to applicant's disclosed invention.

40. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick D. Lynch whose telephone number is (571)270-3736. The examiner can normally be reached on Monday-Friday, 7:30 a.m. - 5:00 p.m., EST.

41. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Dunn can be reached on (571) 272-6670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

42. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the

automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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